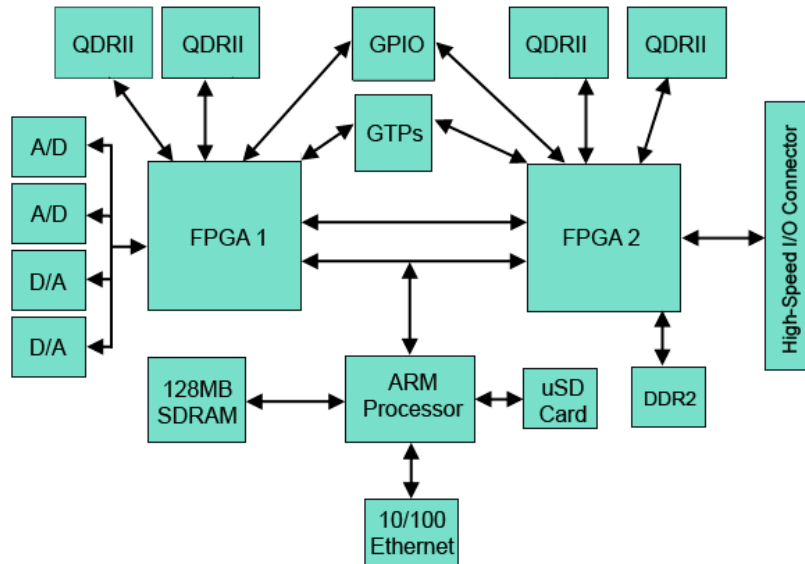


*The IPPV5 is a
Xilinx® Virtex-5
based FPGA
Portable Radio and
Signal Analysis
Platform*



Features

- High-performance Atmel ARM91SAM9260 ARM processor running BrikHouse Linux for command and control
- 10/100 Ethernet for command and control
- Two high-performance Xilinx Virtex-5 FPGAs. Either two XC5VSC95Ts or a XC5VSX95T/SC5VLX155T combination
- Two 14-bit A/D converters at 250MSPS and analog input BW <= 950MHz
- Two 16-bit D/A converters at up to 500MSPS
- Precision time tagging from NMEA-0183 or IRIG-B
- Eight high-speed GTP ports for Gigabit Ethernet or other high-speed serial IO
- Four 72Mbit QDRII SRAMs—two per FPGA—250 MHz
- One 4Gbit DDR2 SDRAM connected to FPGA 2

Description

IPPV5 is Rincon Research's second generation compact, portable software radio and signal analysis platform. The IPPV5 allows you to digitize two channels of analog data with up to 125MHz of bandwidth for processing on the two onboard Xilinx Virtex 5 FPGAs. The analog input bandwidth of the A/Ds allow for direct IF conversion of signals up to 950MHz with proper band pass filtering.

Xilinx high-speed GTP I/O interface is brought out from both FPGAs to allow for Gigabit Ethernet traffic directly to/from each FPGA. Four GTPs are brought out from each FPGA allowing for XAUI 10Gbit from each FPGA as well.

Integrated Processing Platform IPPV5

Command and control of the IPPV5 is done via an onboard ARM processor leaving both FPGAs completely free for user applications. The ARM runs the BrikHouse Linux operating system which allows for control of the system over the network interface.

The IPPV5 has been designed for rugged passive cooling concepts by mounting the I/O connectors on one side and the FPGA's and other heat producing components on the other side.

Specifications

General

Power	9.5–14.5VDC, 12VDC nominal
Power Connector	3-pin locking Mini-Fit Jr.

Memory

FPGA 1	2 independent QDRII SRAMs. 72 Mbits (2Mx36) each
FPGA 2	2 independent QDRII SRAMs. 72 Mbits (2Mx36) each 1 DDR2 4Gbit (32M x 8 x 8 banks x 2 ranks)
ARM	1GB uSD card (2GB support) user-replaceable 128MB SDRAM

High-Speed Input/Output

Analog Input	1.5Vpp(max), 50 ohm AC Coupled, MCX
Analog Output	0.5Vpp(max), 50 ohm AC Coupled, MCX
1 PPS	CMOS Compatible 10K or 50 ohm (jumper selectable) MCX
Time	NMEA-0183 RS-232 or IRIG-B (600 or 50 ohm, jumper selectable)
Command/Control	10/100 Ethernet RJ45
Parallel	88 pins (single ended) + 4 Differential Pairs. QTH-090 Style Vertical mount connector
GPIO	24 bits, 8 per FPGA and 8 to the ARM processor
High-Speed Serial	8 Xilinx Virtex-5 GTP (4 per FPGA) on a single QTH Connector

Physical Properties

Dimensions	3-7/8"W x 1-1/4"H x 8-1/8"D
Temperature, Operating	0C to +70C (with sufficient cooling)